



STIC Search Report

EIC 1700

STIC Database Tracking Number: 151619

TO: Nathan Nutter

Location: 10B75

Art Unit : 1711 10074

May 3, 2005

Case Serial Number: 10/643144

From: Usha Shrestha

Location: EIC 1700

REMSEN 4B28

Phone: 571/272-3519

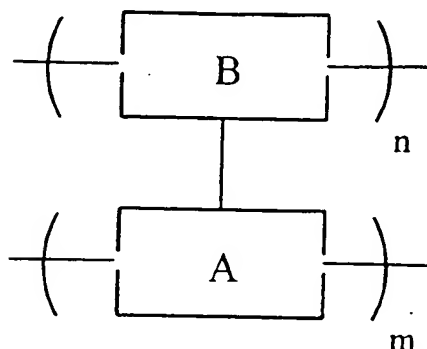
usha.shrestha@uspto.gov

Search Notes

CLAIMS

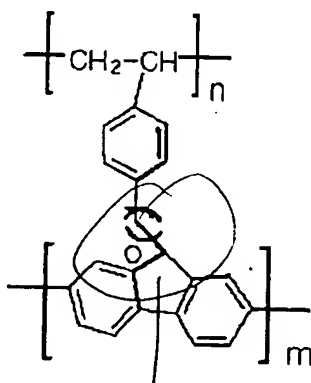
We claim:

1. A blue light-emitting polymer with ladder-type structure represented by the following formula:



wherein A is selected from polyfluorene, polythiophene, polypyrrole, polycarbazole, polyphenylene, polyaniline, polypyridine; B is selected from polystyrene, polypyrrol, polycarbonate, polythiophene, polyphenylene, polyaniline, polypyridine, polycarbazole; n is an integer of 5 to 100; and m is an integer of 2 to 100.

2. The blue light-emitting polymers to claim 1, wherein A is polyfluorene with the following formula and B is polystyrene:



SUBSTITUTE SPECIFICATION

wherein n is an integer of 5 to 100; and m is an integer of 2 to 100.

=> fil reg

FILE 'REGISTRY' ENTERED AT 16:21:42 ON 03 MAY 2005
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=> d his ful

FILE 'HCAPLUS' ENTERED AT 13:15:04 ON 03 MAY 2005

E US20040079924/PN

L1 1 SEA ABB=ON PLU=ON US2004079924/PN
D SCAN
SEL RN

FILE 'REGISTRY' ENTERED AT 13:15:38 ON 03 MAY 2005

L2 10 SEA ABB=ON PLU=ON (30030-25-2/BI OR 42914-68-1/BI OR
684215-56-3/BI OR 684215-57-4/BI OR 684215-58-5/BI OR
684215-59-6/BI OR 684215-60-9/BI OR 684215-61-0/BI OR
684215-62-1/BI OR 684215-63-2/BI)
D SCAN

FILE 'REGISTRY' ENTERED AT 13:47:23 ON 03 MAY 2005

L3 114929 SEA ABB=ON PLU=ON PSTY/PCT
L4 17767 SEA ABB=ON PLU=ON PC/PCT
L5 713 SEA ABB=ON PLU=ON PPH/PCT
E PYRROL/CN
L6 1 SEA ABB=ON PLU=ON PYRROL/CN
D RN
L7 717 SEA ABB=ON PLU=ON 109-97-7/CRN
E THIOPHENE/CN
L8 1 SEA ABB=ON PLU=ON THIOPHENE/CN
D RN
L9 293 SEA ABB=ON PLU=ON 110-02-1/CRN
E ANILINE/CN
L10 1 SEA ABB=ON PLU=ON ANILINE/CN
D RN
L11 3877 SEA ABB=ON PLU=ON 62-53-3/CRN
E PYRIDINE/CN
L12 1 SEA ABB=ON PLU=ON PYRIDINE/CN
D RN
L13 6778 SEA ABB=ON PLU=ON 110-86-1/CRN
E CARBAZOLE/CN
L14 1 SEA ABB=ON PLU=ON CARBAZOLE/CN
D RN
L15 251 SEA ABB=ON PLU=ON 86-74-8/CRN
E FLUORENE/CN
L16 1 SEA ABB=ON PLU=ON FLUORENE/CN
D RN
L17 198 SEA ABB=ON PLU=ON 86-73-7/CRN
L18 143865 SEA ABB=ON PLU=ON L3 OR L4 OR L5 OR L7 OR L9 OR L11
OR L13 OR L15
L19 12796 SEA ABB=ON PLU=ON L7 OR L9 OR L11 OR L13 OR L15 OR
L17 OR L5
L20 12599 SEA ABB=ON PLU=ON L18 AND L19
L21 1 SEA ABB=ON PLU=ON L20 AND L2
D SCAN
L22 7 SEA ABB=ON PLU=ON L2 AND L18
L23 1 SEA ABB=ON PLU=ON L2 AND L19

```

      D SCAN L22
L24      1 SEA ABB=ON  PLU=ON  L18 AND L17
      D SCAN
L25      7639 SEA ABB=ON  PLU=ON  L20 AND 2/NC
L26      SCR 1918
L*** DEL  0 S L2 AND L15
L27      1 SEA ABB=ON  PLU=ON  L2 AND L17
L28      1 SEA ABB=ON  PLU=ON  L3 AND L17
      D SCAN
      E STYRENE/CN
L29      1 SEA ABB=ON  PLU=ON  STYRENE/CN
      D SCAN
      D RN
L30      9302 SEA ABB=ON  PLU=ON  L20 NOT 1-5/M
      SAV L30 NUT144/A

FILE 'HCAPLUS' ENTERED AT 15:41:17 ON 03 MAY 2005
L31      36374 SEA ABB=ON  PLU=ON  L30
L32      365042 SEA ABB=ON  PLU=ON  L18
L33      40285 SEA ABB=ON  PLU=ON  L19
L34      40017 SEA ABB=ON  PLU=ON  L32 AND L33
L35      1 SEA ABB=ON  PLU=ON  L22
L36      10122 SEA ABB=ON  PLU=ON  L31(L) PREP?/RL
L37      45 SEA ABB=ON  PLU=ON  L36 AND LADDER?
L38      4 SEA ABB=ON  PLU=ON  L37 AND OPTIC?/SC,SX
      D FHITSTR
L39      444 SEA ABB=ON  PLU=ON  L36 AND OPTIC?/SC,SX
L40      4 SEA ABB=ON  PLU=ON  L39 AND LADDER?
L41      18 SEA ABB=ON  PLU=ON  L39 AND BLUE(2A)LIGHT?
      D FHITSTR
      D FHITSTR 2-3
L42      21 SEA ABB=ON  PLU=ON  L41 OR L40 OR L38
L43      16388 SEA ABB=ON  PLU=ON  L34 AND PREP?/RL
L44      717 SEA ABB=ON  PLU=ON  L43 AND OPTIC?/SC,SX
L45      4 SEA ABB=ON  PLU=ON  L44 AND LADDER?
L46      23 SEA ABB=ON  PLU=ON  L44 AND BLUE(2A)LIGHT?
L47      26 SEA ABB=ON  PLU=ON  L46 OR L45
L48      26 SEA ABB=ON  PLU=ON  L42 OR L47 OR L35
L49      1 SEA ABB=ON  PLU=ON  L37 AND BLUE(2A)LIGHT?
      D SCAN
L50      7 SEA ABB=ON  PLU=ON  L37 AND (ELECTROLUMIN? OR LUMINES?
      OR ?EMIT? OR LED OR OLED)
      D FHITSTR
      D FHITSTR 2-3
L51      29 SEA ABB=ON  PLU=ON  L48 OR L49 OR L50

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FILE 'REGISTRY' ENTERED AT 16:21:42 ON 03 MAY 2005

FILE HCAPLUS

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=> d que 131

L3	114929	SEA FILE=REGISTRY	ABB=ON	PLU=ON	PSTY/PCT
L4	17767	SEA FILE=REGISTRY	ABB=ON	PLU=ON	PC/PCT
L5	713	SEA FILE=REGISTRY	ABB=ON	PLU=ON	PPH/PCT
L7	717	SEA FILE=REGISTRY	ABB=ON	PLU=ON	109-97-7/CRN
L9	293	SEA FILE=REGISTRY	ABB=ON	PLU=ON	110-02-1/CRN
L11	3877	SEA FILE=REGISTRY	ABB=ON	PLU=ON	62-53-3/CRN
L13	6778	SEA FILE=REGISTRY	ABB=ON	PLU=ON	110-86-1/CRN
L15	251	SEA FILE=REGISTRY	ABB=ON	PLU=ON	86-74-8/CRN
L17	198	SEA FILE=REGISTRY	ABB=ON	PLU=ON	86-73-7/CRN
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L30	9302	SEA FILE=REGISTRY	ABB=ON	PLU=ON	L20 NOT 1-5/M
L31	36374	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L30

=> d que 134

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L17	198	SEA FILE=REGISTRY	ABB=ON	PLU=ON	86-73-7/CRN
L18	143865	SEA FILE=REGISTRY	ABB=ON	PLU=ON	L3 OR L4 OR L5 OR L7 OR L9 OR L11 OR L13 OR L15
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L32	365042	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L18
L33	40285	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L19
L34	40017	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L32 AND L33

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 16:22:25 ON 03 MAY 2005
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=> d 151 1-29 ibib abs hitstr hitind

L51 ANSWER 1 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:25671 HCAPLUS
DOCUMENT NUMBER: 142:298402
TITLE: Poly(fluorene)s and poly(p-phenylene)s with
pyrenyltriazine segments: synthesis and
photophysics
AUTHOR(S): Mikroyannidis, John A.; Persephonis, Peter G.;
Giannetas, Vassilis G.

CORPORATE SOURCE: Chemical Technology Laboratory, Department of Chemistry, University of Patras, Patras, GR-26500, Greece

SOURCE: Synthetic Metals (2005), 148(3), 293-299
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

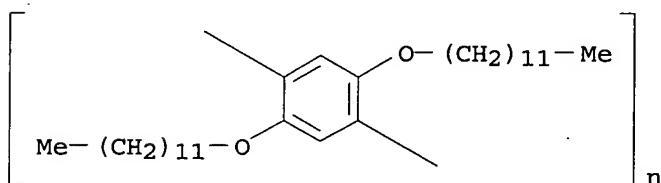
LANGUAGE: English

AB A Friedel-Crafts reaction between cyanuric chloride and pyrene afforded 2,4-dichloro-6-(pyren-1-yl)-1,3,5-triazine (1). This reacted with 4-bromophenol to yield 2,4-bis(4-bromophenoxy)-6-(pyren-1-yl)-1,3,5-triazine (2). A series of random copolymers PF-Pyr with various compns. were prepared by Suzuki polycondensation from 2,7-dibromo-9,9-di-2-ethylhexylfluorene (3) and 2. In addition, a series of random copolymers PP-Pyr were similarly prepared from 1,4-dibromo-2,5-didodecyloxybenzene (5) and 2. Solns. of copolymers PF-Pyr emitted **blue light** with photoluminescence (PL) maximum at 414-444 nm. Thin films of these copolymers emitted intense green light with PL maximum near 520 nm. An efficient energy transfer took place in thin films from the fluorene to the pyrenyltriazine segment even the content of the latter in copolymer was 0.5 mol%. Copolymers PP-Pyr behaved as **blue light**-emitting materials both in solution and solid state. Their PL maximum was red shifted with increasing the pyrenyltriazine content in copolymer. The PL quantum yields in solution were 0.42-0.56 for PF-Pyr and 0.27-0.35 for PP-Pyr.

IT 156028-49-8P, Poly[2,5-bis(dodecyloxy)-1,4-phenylene] (preparation, photophysics, and properties of poly(fluorene)s and poly(p-phenylene)s with pyrenyltriazine segments)

RN 156028-49-8 HCAPLUS

CN Poly[2,5-bis(dodecyloxy)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 73

IT 156028-49-8P, Poly[2,5-bis(dodecyloxy)-1,4-phenylene]

847567-82-2P 847567-83-3P 847567-84-4P

(preparation, photophysics, and properties of poly(fluorene)s and poly(p-phenylene)s with pyrenyltriazine segments)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:833279 HCAPLUS

DOCUMENT NUMBER: 142:280471

TITLE: Conjugated Polymers with Linear and Hyperbranched Structures and Advanced Materials Properties

AUTHOR(S): Yip, Jacky Wing; Peng, Han; Haeussler, Matthias; Zheng, Ronghua; Tang, Ben

CORPORATE SOURCE: Department of Chemistry, Center for Display
Research, Institute of Nano Science and
Technology, Kowloon, Hong Kong
SOURCE: Molecular Crystals and Liquid Crystals (2004),
415, 43-60
CODEN: MCLCD8; ISSN: 1542-1406
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Alkyne polymns. are effected by tungsten- and tantalum-based
catalysts, giving linear polyacetylenes (LPAs) and hyperbranched
polyarylenes (HPAs) of high mol. wts. (Mw up to 2.5 + 105)
in high yields (up to 93%). All the LPAs and HPAs are thermally
stable and completely soluble in common solvents such as THF,
toluene, dichloromethane, and chloroform. Incorporation of
biphenyl mesogenic pendants into poly(1-phenyl-1-hexyne) structure
endows the LCPA with nematicity. Upon photoexcitation, the LPAs
and HPAs emit strong UV and **blue lights** with
high quantum yields (up to 94%). Multilayer electroluminescence
devices of LPAs emit **blue light** with maximum
luminance and external quantum efficiency of 1065 cd/m² and 0.86%,
resp. The HPAs attenuate strong laser pulses, with optical
limiting performances comparable to that of C60, a well-known
optical limiter.

IT 365568-89-4P 365568-91-8P
(preparation and properties of polyacetylene conjugated polymers
with linear and hyperbranched structures)

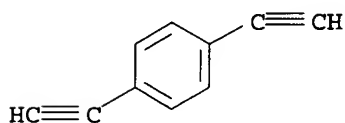
RN 365568-89-4 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX
NAME)

CM 1

CRN 935-14-8

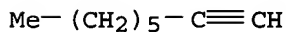
CMF C10 H6



CM 2

CRN 629-05-0

CMF C8 H14



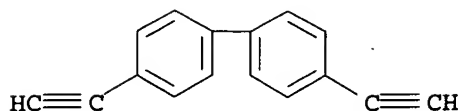
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA
INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0

CMF C8 H14

Me-(CH₂)₅-C≡CH

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73, 76

IT 365568-89-4P 365568-91-8P 365568-94-1P

516510-16-0P 847197-32-4P

(preparation and properties of polyacetylene conjugated polymers with linear and hyperbranched structures)

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 3 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:352848 HCAPLUS

DOCUMENT NUMBER: 140:382864

TITLE: Blue light-

emitting, ladder-type

polymer with excellent heat stability

INVENTOR(S): Kwag, Gwang Hoon; Park, Eun Joo; Kim, Eun Il;

Koh, Jae Young

PATENT ASSIGNEE(S): Korea Kumho Petrochemical Co., Ltd., S. Korea

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004079924	A1	20040429	US 2003-643144	2003 0818
JP 2004143426	A2	20040520	JP 2003-303391	2003 0827
PRIORITY APPLN. INFO.:			KR 2002-65464	A 2002 1025

AB The invention relates to the ladder-type blue
light-emitting polymers with excellent heat

stability which are polymerized either grafting with blue luminescent monomers on the polymer backbones or adding fluorene to styrene monomers. The above blue light-emitting polymers have a high glass transition temperature and a 5%-weight-loss temperature $>400^{\circ}$. Accordingly these polymers can be used as blue luminescent materials in the display devices and as luminescent cases for home appliances or cellular phones.

IT 684215-57-4P 684215-58-5P 684215-59-6P
684215-60-9P 684215-61-0P 684215-62-1P
684215-63-2P

(blue light-emitting,
ladder-type polymer for electroluminescent
device)

RN 684215-57-4 HCAPLUS

CN 9H-Fluorene, 2,7-dibromo-, polymer with
(chloromethyl)ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



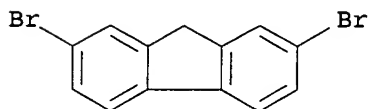
D1-CH₂-Cl

D1-CH=CH₂

CM 2

CRN 16433-88-8

CMF C13 H8 Br2



RN 684215-58-5 HCAPLUS

CN 9H-Fluorene, polymer with (chloromethyl)ethenylbenzene, graft
(9CI) (CA INDEX NAME)

CM 1

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



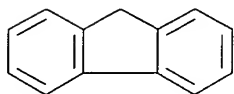
D1-CH₂-Cl

D1-CH=CH₂

CM 2

CRN 86-73-7

CMF C13 H10



RN 684215-59-6 HCAPLUS

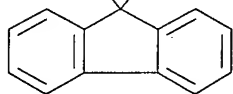
CN 9H-Fluorene, 9,9-dihexyl-, polymer with
(chloromethyl)ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 123863-97-8

CMF C25 H34

Me-(CH₂)₅-(CH₂)₅-Me



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



D1-CH₂-Cl

D1-CH=CH₂

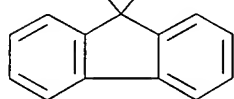
RN 684215-60-9 HCAPLUS
 CN 9H-Fluorene, 2,7-dibromo-, polymer with
 (chloromethyl)ethenylbenzene and 9,9-dihexyl-9H-fluorene, graft
 (9CI) (CA INDEX NAME)

CM 1

CRN 123863-97-8

CMF C25 H34

Me-(CH₂)₅ (CH₂)₅-Me



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



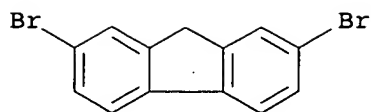
D1-CH₂-Cl

D1-CH=CH₂

CM 3

CRN 16433-88-8

CMF C13 H8 Br2



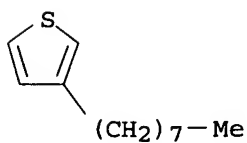
RN 684215-61-0 HCAPLUS

CN Thiophene, 3-octyl-, polymer with (chloromethyl)ethenylbenzene and 2,7-dibromo-9H-fluorene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 65016-62-8

CMF C12 H20 S



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

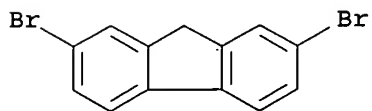
CCI IDS

D1-CH₂-ClD1-CH=CH₂

CM 3

CRN 16433-88-8

CMF C13 H8 Br2



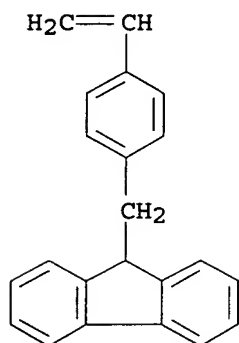
RN 684215-62-1 HCAPLUS

CN 9H-Fluorene, 9-[(4-ethenylphenyl)methyl]-, homopolymer, syndiotactic (9CI) (CA INDEX NAME)

CM 1

CRN 684215-56-3

CMF C22 H18



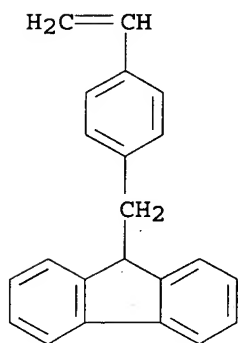
RN 684215-63-2 HCAPLUS

CN 9H-Fluorene, 9-[(4-ethenylphenyl)methyl]-, polymer with ethenylbenzene, syndiotactic, graft (9CI) (CA INDEX NAME)

CM 1

CRN 684215-56-3

CMF C22 H18



CM 2

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

IC ICM C09K011-06

INCL 252301350

CC 73-11 (Optical, Electron, and Mass Spectroscopy and
Other Related Properties)
Section cross-reference(s): 37, 74

ST blue light emitting ladder
polymer heat stability

IT Conducting polymers
Electroluminescent devices
(blue light-emitting,
ladder-type polymer for electroluminescent
device)

IT Ladder polymers
(blue light-emitting,
ladder-type polymer for electroluminescent
device)

IT Luminescent substances
(electroluminescent polymers; blue
light-emitting, ladder-type polymer
for electroluminescent device)

IT 30030-25-2 42914-68-1
(blue light-emitting,
ladder-type polymer for electroluminescent
device)

IT 684215-56-3P
(blue light-emitting,
ladder-type polymer for electroluminescent
device)

IT 684215-57-4P 684215-58-5P 684215-59-6P
684215-60-9P 684215-61-0P 684215-62-1P
684215-63-2P
(blue light-emitting,
ladder-type polymer for electroluminescent
device)

L51 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:977868 HCAPLUS

DOCUMENT NUMBER: 140:206715

TITLE: Chain-length dependent para-phenylene film-
and needle-growth on dielectrics

AUTHOR(S): Balzer, F.; Rubahn, H.-G.

CORPORATE SOURCE: Institut fur Physik/ASP, Humboldt-Universitat
zu Berlin, Berlin, D-12489, Germany

SOURCE: Surface Science (2004), 548(1-3), 170-182

CODEN: SUSCAS; ISSN: 0039-6028

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

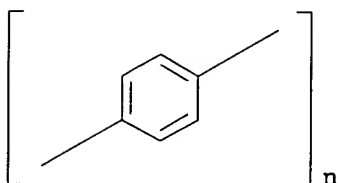
LANGUAGE: English

AB Surface unit cells of vacuum grown ultrathin films of blue
-light emitting para-phenylene oligomers on alkali
halides and on muscovite mica were determined using LEED. Both, films
from upright and from laying mols. are grown on alkali halide (1 0
0) and mica (0 0 1) single crystal faces. On alkali halide (1 0
0) faces the ordered growth of upright phenylene mols. with
several rotational domains is observed, whereas on mica (0 0 1)
single crystalline aggregates (nanofibers) of laying mols. are formed.
Their mutual parallel orientation is strictly determined by the
orientation of mica surface dipoles. Structural information from
diffraction expts. is complemented by morphol. information using
fluorescence- and atomic force microscopy as well as UV/visible
absorption spectroscopy.

IT 25190-62-9P, Poly(1,4-phenylene)
(chain-length dependent para-phenylene film- and needle-growth
on dielects.)

RN 25190-62-9 HCAPLUS

CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 66, 76

IT 25190-62-9P, Poly(1,4-phenylene)

(chain-length dependent para-phenylene film- and needle-growth on dielects.)

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:671141 HCAPLUS

DOCUMENT NUMBER: 139:180854

TITLE: Copolymer comprising meta-phenylene unit and ortho-phenylene unit

INVENTOR(S): Yamamoto, Ryuichi; Arai, Takashi

PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 2003238666	A2	20030827	JP 2002-46564	

2002
0222

PRIORITY APPLN. INFO.: JP 2002-46564

2002
0222

AB The organic solvent-soluble copolymer consists of 20-95% nonsubstituted m-phenylene units and balance nonsubstituted o-phenylene units, which shows good heat resistance and blue light emission under UV irradiation. Thus, 8:2 mixture of m-dibromobenzene and o-dibromobenzene were polymerized in the presence of Mg and NiCl₂(2,2'-bipyridine) in refluxed THF for 24 h to give the copolymer, whose solution was cast to give a film showing fluorescence at λ_{max} 350 nm.

IT 581772-64-7P, m-Dibromobenzene-o-dibromobenzene copolymer (solvent-soluble copolymer comprising meta-phenylene unit and ortho-phenylene unit showing fluorescence)

RN 581772-64-7 HCAPLUS

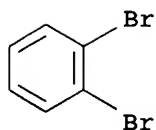
CN Benzene, 1,2-dibromo-, polymer with 1,3-dibromobenzene (9CI) (CA

INDEX NAME)

CM 1

CRN 583-53-9

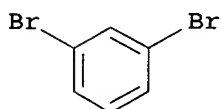
CMF C6 H4 Br2



CM 2

CRN 108-36-1

CMF C6 H4 Br2



IC ICM C08G061-10

ICS H05B033-14; C09K011-06

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 73

IT 581772-64-7P, m-Dibromobenzene-o-dibromobenzene copolymer
(solvent-soluble copolymer comprising meta-phenylene unit and
ortho-phenylene unit showing fluorescence)

L51 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:893956 HCAPLUS

DOCUMENT NUMBER: 139:101494

TITLE: Synthesis and optical properties of
hyperbranched polyaryleneAUTHOR(S): Peng, Han; Luo, Jingdong; Cheng, Lin; Lam,
Jacky W. Y.; Xu, Kaitian; Dong, Yuping; Zhang,
Dezhen; Huang, Yi; Xu, Zhongde; Tang, Ben
ZhongCORPORATE SOURCE: Institute of Nano Science, Open Laboratory of
Chirotechnology, Institute of Molecular
Technology for Drug Discovery and Synthesis,
Department of Chemistry, Hong Kong University
of Science and Technology, Clear Water Bay,
Kowloon, Hong KongSOURCE: Optical Materials (Amsterdam, Netherlands)
(2003), 21(1-3), 315-320

CODEN: OMATET; ISSN: 0925-3467

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB High mol. weight, hyperbranched polyarylene were synthesized in high
isolation yields by the copoly-cyclotrimerization of
2,5-diethynyl-thiophene (1), 4,4'-biphenyl-diyne (2), and

2,7-diethynyl-fluorene (3) with 1-heptyne (4) and 1-dodecyne (5) using $\text{TaCl}_5\text{-Ph}_4\text{Sn}$ as the catalyst in toluene. The structures of the polymers were characterized by IR, NMR, TGA, and UV analyses. All the polymers exhibited outstanding thermal stability and emitted strong blue light, whose intensities are higher than that of poly(1-phenyl-1-octyne), a well-known highly emissive polyacetylene. Little red shift was observed in the photoluminescence of the polymer thin films. The polymers strongly attenuated intense pulses of 532 nm laser pulses.

IT 365568-91-8P

(hyperbranched; synthesis and optical properties of hyperbranched polyarylene)

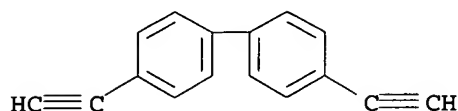
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

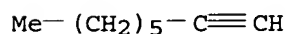
CMF C16 H10



CM 2

CRN 629-05-0

CMF C8 H14



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

IT 365568-91-8P 365568-95-2P 560134-61-4P

(hyperbranched; synthesis and optical properties of hyperbranched polyarylene)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:728858 HCAPLUS

DOCUMENT NUMBER: 137:255082

TITLE: Heat-resistant low-crystallinity adamantane derivative and its use for organic electroluminescent device with high luminescent efficiency and long service life

INVENTOR(S): Takeuchi, Hisato; Tanaka, Hiromitsu; Mouri, Makoto; Mori, Tomohiko; Kojima, Kazushige

PATENT ASSIGNEE(S): Toyota Central Research and Development Laboratories, Inc., Japan; Denso Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

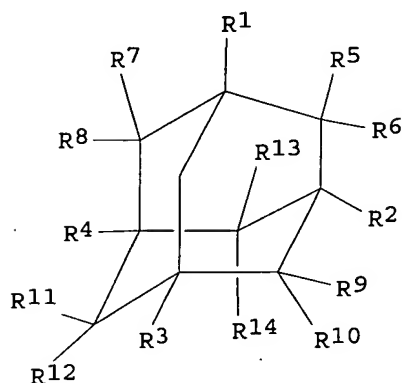
CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002275103	A2	20020925	JP 2001-81434	2001 0321

PRIORITY APPLN. INFO.: JP 2001-81434
 2001
 0321

OTHER SOURCE(S): MARPAT 137:255082
 GI



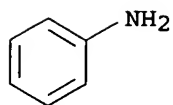
I

AB Title derivative is expressed by a general formula I (≥ 3 of R1-R14 = functional units having hole-transporting, luminous, or electron-transporting properties). The electroluminescent device has ≥ 1 layer containing the adamantane derivative between electrodes. Thus, an electroluminescent device containing tetrapyrenyl-substituted adamantane as an electroluminescent layer and NPD as a hole-transporting layer emitted **blue light** with luminance 350 cd/m² at 10 mA/cm².

IT 142-04-1, Aniline hydrochloride
 (preparation of adamantane derivative for organic electroluminescent device with high luminescent efficiency and long service life)

RN 142-04-1 HCAPLUS

CN Benzenamine, hydrochloride (9CI) (CA INDEX NAME)



● HCl

IC ICM C07C013-68
ICS C07C025-22; C07C211-50; C09K011-06; H05B033-14; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and
Other Related Properties)
Section cross-reference(s): 24
IT 62-53-3, Aniline, reactions 142-04-1, Aniline
hydrochloride 32446-12-1, 1-Bromoadamantan-2-one 39751-07-0,
2,6-Adamantanedione 164461-18-1
(preparation of adamantane derivative for organic electroluminescent device
with high luminescent efficiency and long service life)

L51 ANSWER 8 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:626665 HCAPLUS
DOCUMENT NUMBER: 138:17757
TITLE: Hyperbranched polyphenylenes containing
biphenyl moieties: Synthesis, light emission,
and optical limiting
AUTHOR(S): Peng, Han; Lam, Jacky-Yip; Chen, Junwu; Zheng,
Yonghua; Luo, Jingdong; Xu, Kaitian; Tang, Ben
Zhong
CORPORATE SOURCE: Institute of Nano Science and Technology, Hong
Kong University, Kowloon, Peop. Rep. China
SOURCE: Polymer Preprints (American Chemical Society,
Division of Polymer Chemistry) (2002), 43(2),
1318-1319
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer
Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English

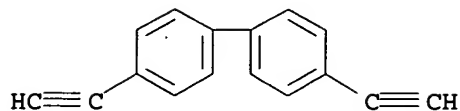
AB A series of hyperbranched polyphenylenes were synthesized by
TaCl₅- and NbCl₅-catalyzed copolycyclotrimerizations of a
4,4'-diethynylbiphenyl with different monoacetylenes or monoynes.
These copolymers have good solubility in common organic solvents including
THF, toluene, chloroform and DCM, and possess excellent thermal
stability. All the polyphenylenes effectively limit the 8-ns
pulses of 532 nm laser light and all emit strong deep-blue
light of ≈400 nm when excited at 345 nm. These
novel hyperbranched polymers are thus excellent optical materials
with high thermal stability.

IT 76307-47-6P 477587-90-9P 477587-91-0P
(synthesis, light emission, and optical limiting of
hyperbranched polyphenylenes containing biphenyl moieties)

RN 76307-47-6 HCAPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI)
(CA INDEX NAME)

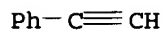
CM 1

CRN 38215-38-2
CMF C16 H10



CM 2

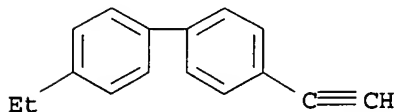
CRN 536-74-3
CMF C8 H6



RN 477587-90-9 HCAPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 4-ethyl-4'-ethynyl-1,1'-biphenyl (9CI) (CA INDEX NAME)

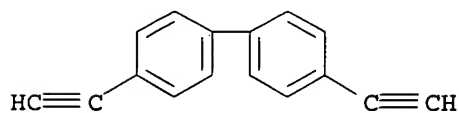
CM 1

CRN 477587-89-6
CMF C16 H14



CM 2

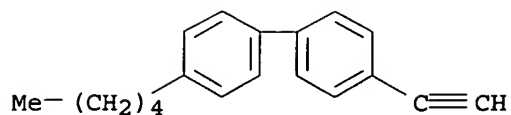
CRN 38215-38-2
CMF C16 H10



RN 477587-91-0 HCAPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 4-ethynyl-4'-pentyl-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

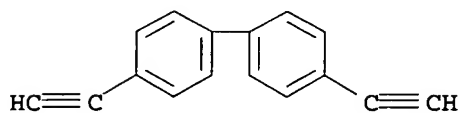
CRN 80563-43-5
CMF C19 H20



CM 2

CRN 38215-38-2

CMF C16 H10



IT 365568-92-9P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

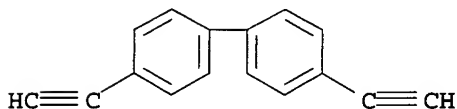
RN 365568-92-9 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

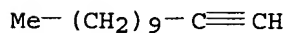
CMF C16 H10



CM 2

CRN 765-03-7

CMF C12 H22



CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 38

IT 76307-47-6P 477587-90-9P 477587-91-0P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

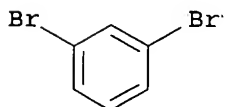
IT 365568-92-9P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

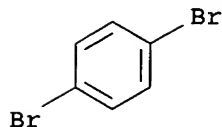
IN THE RE FORMAT

L51 ANSWER 9 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:453881 HCAPLUS
DOCUMENT NUMBER: 137:208033
TITLE: Combinatorial synthesis and screening for blue
luminescent π -conjugated polymer thin film
AUTHOR(S): Muramatsu, Yukiko; Yamamoto, Takakazu;
Hayakawa, Tomohiro; Koinuma, Hideomi
CORPORATE SOURCE: CREST - Japan Science and Technology
Corporation, Kawaguchi, Saitama, 332-0012,
Japan
SOURCE: Applied Surface Science (2002), 189(3-4),
319-326
CODEN: ASUSEE; ISSN: 0169-4332
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two series of random copolymers (poly(PP-ran-MP)s which consist of
p-phenylene, PP, and m-phenylene, MP, units and poly(PPy-ran-MPy)s
which consist of p-pyridine, PPy, and m-pyridine, MPy, units) with
various monomeric unit ratios were prepared Thin films of
poly(PP-ran-MP)s were combinatorially deposited by vacuum evaporation
with a fixed mask and slit masks on a quartz glass, and
poly(PPy-ran-MPy)s were superposed on the poly(PP-ran-MP)s layer.
The thin film of poly(PP-ran-MP) containing the PP and MP units in a
5:5 ratio, poly(PP-ran-MP-5/5), showed 7.6 times stronger blue
photoluminescence (PL), compared with the thin films of
poly(p-phenylene), PPP, and poly(m-phenylene), PMP, homopolymers.
The PL intensity of the film of poly(PP-ran-MP-5/5) was much
stronger than the sum of the PL intensities of the films of PPP
and PMP. Furthermore, [poly(m-pyridine), PMPy/poly(PP-ran-MP-
5/5)] bi-layer film emitted blue light of
about 3 times stronger intensity than the poly(PP-ran-MP-5/5)
monolayer film. An alternating copolymer of p-phenylene and
m-phenylene, poly(PP-alt-MP-5/5) was prepared by a Stille coupling
reaction and its PL peak was observed at about 50 nm shorter
wavelength than that of poly(PP-ran-MP-5/5).
IT 148601-77-8P, 1,4-Dibromobenzene-1,3-dibromobenzene
copolymer
(combinatorial synthesis and screening for blue luminescent
 π -conjugated polymer thin film)
RN 148601-77-8 HCAPLUS
CN Benzene, 1,3-dibromo-, polymer with 1,4-dibromobenzene (9CI) (CA
INDEX NAME)
CM 1
CRN 108-36-1
CMF C6 H4 Br2



CM 2

CRN 106-37-6
CMF C6 H4 Br2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
IT 148601-77-8P, 1,4-Dibromobenzene-1,3-dibromobenzene copolymer 452309-08-9P, 2,5-Dibromopyridine-3,5-dibromopyridine copolymer 452309-09-0P, 1,4-Bis(trimethylstannyl)benzene-1,3-dibromobenzene copolymer
(combinatorial synthesis and screening for blue luminescent π -conjugated polymer thin film)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STM
ACCESSION NUMBER: 2002:408987 HCAPLUS
DOCUMENT NUMBER: 136:408818
TITLE: Electroluminescent devices using organometallic complex emitting layers
INVENTOR(S): Kathirgamanathan, Poopathy
PATENT ASSIGNEE(S): Elam-T Limited, UK
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002043446	A1	20020530	WO 2001-GB5111	2001 1121
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002023077	A5	20020603	AU 2002-23077	2001 1121
EP 1336325	A1	20030820	EP 2001-997975	

2001
1121

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
JP 2004515042 T2 20040520 JP 2002-545036

2001
1121

US 2004023062 A1 20040205 US 2003-442663

2003
0520

PRIORITY APPLN. INFO.: GB 2000-28439 A

2000
1121

WO 2001-GB5111 W

2001
1121

AB Electroluminescent devices are described which comprise a first electrode, a hole-transporting layer formed of material which emits light in the blue spectrum, an electroluminescent layer incorporating a rare earth complex with an organic ligand, and a second electrode.

IT 25233-30-1, Polyaniline
(electroluminescent devices using rare earth organometallic complex emitting layers)

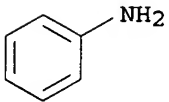
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



IC ICM H05B033-14

ICS H01L051-20; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

IT 905-62-4 2085-33-8, Tris(8-hydroxyquinolinato)aluminum
5521-31-3D, derivs. 7429-90-5, Aluminium, uses 7439-93-2,
Lithium, uses 7440-19-9D, Samarium, compds. 7440-27-9D,
Terbium, compds. 7440-70-2, Calcium, uses 15082-28-7
23467-27-8 25067-59-8, Poly(vinylcarbazole) 25233-30-1
, Polyaniline 25387-93-3 37271-44-6 50926-11-9, ITO
58280-31-2 58328-31-7D, derivs. 65181-78-4, TPD
105389-36-4D, derivs. 123847-85-8, α -NPD 123847-85-8D,
 α -NPD, derivs. 123847-87-0D, derivs. 124729-98-2, Mtdata
134917-82-1 135804-06-7 138372-67-5 142289-08-5D, derivs.
146162-54-1 148044-16-0 148896-39-3 150405-69-9
156952-11-3 182069-71-2 203642-12-0D, derivs. 214341-85-2D,
derivs. 431947-33-0

(electroluminescent devices using rare earth organometallic

complex emitting layers)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:832337 HCAPLUS

DOCUMENT NUMBER: 136:102940

TITLE: Linear and hyperbranched polymers with high
thermal stability and luminescence efficiency

AUTHOR(S): Lam, Jacky Wing Yip; Luo, Jing-Dong; Peng,
Han; Xie, Zhi-Liang; Xue, Kai-Tian; Dong,
Yu-Ping; Cheng, Lin; Qiu, Cheng-Feng; Kwok,
Hoi Sing; Tang, Ben-Zhong

CORPORATE SOURCE: Department of Chemistry, Hong Kong University
of Science and Technology, Hong Kong, Peop.
Rep. China

SOURCE: Chinese Journal of Polymer Science (2001),
19(6), 585-590

CODEN: CJPSEG; ISSN: 0256-7679

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New acetylene monomers, 6-{[(1-naphthylethynyl-4-
phenyl)carbonyl]oxy}-1-phenyl-1-hexyne (1), 2,5-diethynylthiophene
(3), and 4,4'-diethynylbiphenyl (6) were synthesized. Homopolymn.
of 1 and copolycyclotrimerizations of 3 and 6 with 1-heptyne and
1-octyne have been achieved with WCl₆- and TaCl₅-Ph₄Sn catalysts,
resp., giving soluble linear disubstituted polyacetylene (2) and
hyperbranched polyarylenes (5 and 8) with high mol. wts. (up to
1.2 + 105) in high yields (up to 98%). The structures and
properties of the polymers are characterized and evaluated by IR,
NMR, TGA, UV, photoluminescence (PL), and electroluminescence (EL)
analyses. All the polymers possess high thermal stability and
emit strong **blue light** upon photoexcitation.

The intensity of the emitted light is greater than that of
poly(1-phenyl-1-octyne), a well-known highly luminescent
disubstituted polyacetylene. Little aggregation-induced red shift
in the PL was observed in the thin films of the polymers. By
constructing a multi-layer EL device, high EL quantum yield
(0.18%) has been achieved in 2, which are the best results for
substituted polyacetylenes attainable so far.

IT 365568-91-8P

(hyperbranched; preparation and luminescence efficiency of linear
and hyperbranched polymers with high thermal stability)

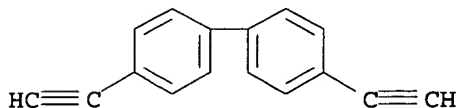
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA
INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0

CMF C8 H14

 $\text{Me}-(\text{CH}_2)_5-\text{C}\equiv\text{CH}$

CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73

IT 365568-91-8P 372075-44-0P

(hyperbranched; preparation and luminescence efficiency of linear and hyperbranched polymers with high thermal stability)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:763374 HCAPLUS

DOCUMENT NUMBER: 135:310707

TITLE: Oligomeric and polymeric OLED materials produced via arylation of quinones

INVENTOR(S): Koch, George C.

PATENT ASSIGNEE(S): Honeywell International Inc., USA

SOURCE: PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001078162	A2	20011018	WO 2001-US11793	2001 0410
WO 2001078162	A3	20020221		
W: JP, KR				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
US 2002037428	A1	20020328	US 2001-833201	2001 0410
US 6784322	B2	20040831		
EP 1196956	A2	20020417	EP 2001-930478	2001 0410
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2003530366	T2	20031014	JP 2001-574917	2001 0410
PRIORITY APPLN. INFO.:			US 2000-195902P	P 2000 0410

WO 2001-US11793

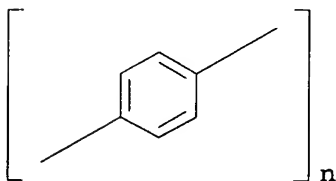
W

2001

0410

OTHER SOURCE(S): MARPAT 135:310707

- AB Organic light-emitting device materials are described by the general formula $R1-(Ari)_n-R2$ ($n = 5-15$; $i = 1-n$ and denotes the position downstream from $R1$; each Ari = independently selected (un)substituted aryl; $R1$ and $R2$ = substituents that increase the solubility of the para-phenylene compound in nonpolar organic solvents relative to the solubility of the corresponding compound wherein $R1$ and $R2$ are hydrogen; with the proviso that the Ari groups are linked together in a 1,4-paraphenylene manner). Preferably, the Ari include benzoquinone or hydroquinone units. Methods of preparing the polymeric materials on a solid support are described which entail contacting a solid support-bound aryl diazonium salt with 3,6-dichloroquinone under conditions sufficient to form a solid support-bound aryl quinone derivative; and contacting the solid support-bound aryl quinone derivative with a selected diazonium compound under conditions sufficient to form an intermediate material; repeating the preceding steps 2-70 times; and terminating the polymeric material by contacting the product with a terminating diazonium compound. The materials may be oligomers or block copolymers. Branched polymeric aromatic compds. comprising tetrasubstituted Ph rings with substituents at the 1, 2, 4, and 5 positions which are described by the general formula $R-(Ari)_n'-R'$ (R = (un)substituted C1-12 alkyl, (un)substituted C1-12 alkoxy, Ph, or halo; and $n' = 3-8$) and polyfurano ladder oligomers are also described. Methods of producing light-emitting polymers are also described which entail photopolymerization of the oligomers.
- IT 25190-62-9DP, Poly(1,4-phenylene), derivs.
(oligomeric and polymeric electroluminescent materials and their production)
- RN 25190-62-9 HCAPLUS
- CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



- IC ICM H01L051-30
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76
- ST electroluminescent material oligomeric polymeric;
quinoline deriv polymer electroluminescent material
- IT Polymers, uses
(aromatic; oligomeric and polymeric electroluminescent materials and their production)
- IT Phosphors
(electroluminescent; oligomeric and polymeric electroluminescent materials and their production)
- IT Polymers, uses

(heterocyclic; oligomeric and polymeric
electroluminescent materials and their production)

IT Arylation
Electroluminescent devices
(oligomeric and polymeric **electroluminescent**
materials and their production)

IT Oligomers
(oligomeric and polymeric **electroluminescent**
materials and their production)

IT Quinones
(polymers; oligomeric and polymeric **electroluminescent**
materials and their production)

IT 71-43-2DP, Benzene, aryl derivs., uses 106-51-4DP,
2,5-Cyclohexadiene-1,4-dione, derivs., polymers 123-31-9DP,
Hydroquinone, derivs., polymers 25086-73-1DP, derivs.
25190-62-9DP, Poly(1,4-phenylene), derivs.
(oligomeric and polymeric **electroluminescent**
materials and their production)

IT 615-93-0
(oligomeric and polymeric **electroluminescent**
materials and their production)

L51 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:585225 HCAPLUS

DOCUMENT NUMBER: 135:304376

TITLE: Light emitting and optical limiting properties
of hyperbranched polyphenylenes

AUTHOR(S): Peng, Han; Luo, Jingdong; Cheng, Lin; Xu,
Kaitain; Jia, Demin; Zhang, Dezhen; Xu,
Zhongde; Tang, Ben Zhong

CORPORATE SOURCE: Department of Chemistry, Hong Kong University
of Science and Technology, Hong Kong, Peop.
Rep. China

SOURCE: Polymeric Materials Science and Engineering
(2001), 85, 383-384

CODEN: PMSEDG; ISSN: 0743-0515

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New hyperbranched polyphenylenes with high mol. wts. were
synthesized by copolycyclotrimerization of diynes with monoynes
with various aromatic and aliphatic groups. The structures and
properties of the copolymers are characterized and evaluated by
IR, UV, NMR, TGA and fluorescence analyses. The results indicate
that these copolymers have good solubility in common organic solvents,
excellent thermal stability, and emit strong deep-blue
light at 400 nm. The observed fluorescence intensities are
much high than that of poly(1-phenyl-1-octyne), a well-known
highly fluorescent acetylene. All the polyphenylenes effectively
limit the 8-ns pulses of 532 nm laser light. These novel
hyperbranched polyphenylenes are thus excellent optical limiting
materials with high thermal stability.

IT 28408-99-3P 76307-47-6P 365568-89-4P
365568-90-7P 365568-91-8P 365568-92-9P
(light emitting and optical limiting properties of
hyperbranched polyphenylenes)

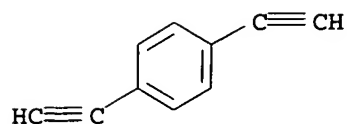
RN 28408-99-3 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with ethynylbenzene (9CI) (CA
INDEX NAME)

CM 1

CRN 935-14-8

CMF C10 H6



CM 2

CRN 536-74-3

CMF C8 H6

Ph-C≡CH

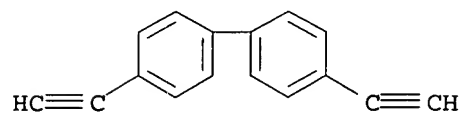
RN 76307-47-6 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI)
(CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 536-74-3

CMF C8 H6

Ph-C≡CH

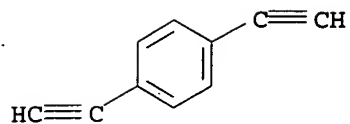
RN 365568-89-4 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX
NAME)

CM 1

CRN 935-14-8

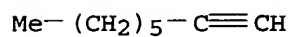
CMF C10 H6



CM 2

CRN 629-05-0

CMF C8 H14



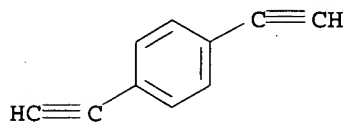
RN 365568-90-7 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

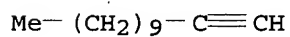
CMF C10 H6



CM 2

CRN 765-03-7

CMF C12 H22



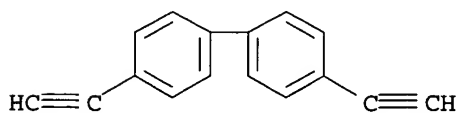
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0

CMF C8 H14

 $\text{Me}-(\text{CH}_2)_5-\text{C}\equiv\text{CH}$

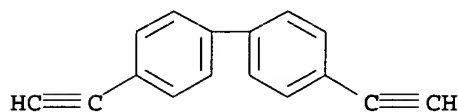
RN 365568-92-9 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 765-03-7

CMF C12 H22

 $\text{Me}-(\text{CH}_2)_9-\text{C}\equiv\text{CH}$

CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73

IT 28408-99-3P 76307-47-6P 365568-89-4P

365568-90-7P 365568-91-8P 365568-92-9P

365568-93-0P 365568-94-1P 365568-95-2P

(light emitting and optical limiting properties of hyperbranched polyphenylenes)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 14 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:221050 HCAPLUS

DOCUMENT NUMBER: 135:20054

TITLE: Synthesis and photoluminescence of hyperbranched polyphenylenes

AUTHOR(S): Peng, Han; Xu, Kaitian; Luo, Jingdong; Tang, Ben Zhong

CORPORATE SOURCE: Department of Chemistry, Hong Kong University of Science & Technology, Hong Kong, Peop. Rep. China

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(1), 560-561

CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB Hyperbranched polyphenylenes with unique structure were synthesized by cyclotrimerization polymerization of diacetylenes with monoacetylenes. Copolymns. of 4,4'-diethynylbiphenyl and 1,4-diethynylbenzene with phenylacetylene and 1-naphthylacetylene were carried out using TaCl₅-Ph₄Sn as catalyst in toluene. The structure and mol. weight of the copolymers can be tailored by changing the feed ratio of diacetylene to monoacetylene. The structure and properties of the polyphenylenes were studied by IR, UV, NMR, TGA and fluorescence spectroscopy methods. The polyphenylenes have good solubility in common organic solvents and excellent thermal stability up to 500° and emit strong deep-blue light at about 400 nm when excited at 350 nm. The observed fluorescence intensity is much higher than that of poly(1-phenyl-1-octyne), a well-known highly fluorescent polymer. The hyperbranched polyphenylenes with unique structure are excellent luminescent materials with high thermal stability.

IT 28408-99-3P 76307-47-6P, 4,4'-Diethynylbiphenyl-phenylacetylene copolymer 99944-43-1P 343217-11-8P

(preparation via cyclotrimerization and photoluminescence of thermally stable hyperbranched polyphenylene polyacetylenes)

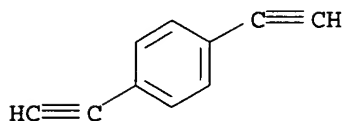
RN 28408-99-3 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with ethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

CMF C10 H6



CM 2

CRN 536-74-3

CMF C8 H6

Ph-C≡CH

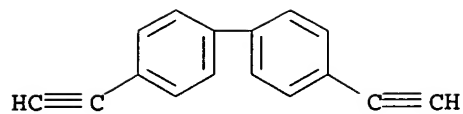
RN 76307-47-6 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

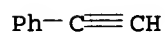
CMF C16 H10



CM 2

CRN 536-74-3

CMF C8 H6



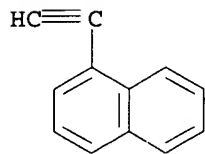
RN 99944-43-1 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with 1-ethynylnaphthalene (9CI)
(CA INDEX NAME)

CM 1

CRN 15727-65-8

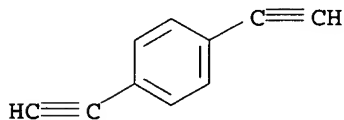
CMF C12 H8



CM 2

CRN 935-14-8

CMF C10 H6



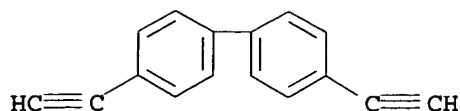
RN 343217-11-8 HCAPLUS

CN Naphthalene, 1-ethynyl-, polymer with 4,4'-diethynyl-1,1'-biphenyl
(9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

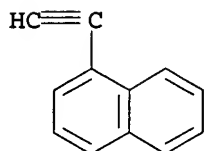
CMF C16 H10



CM 2

CRN 15727-65-8

CMF C12 H8



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT 28408-99-3P 76307-47-6P, 4,4'-Diethynylbiphenyl-
phenylacetylene copolymer 99944-43-1P
343217-11-8P

(preparation via cyclotrimerization and photoluminescence of
thermally stable hyperbranched polyphenylene polyacetylenes)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 15 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:206603 HCAPLUS

DOCUMENT NUMBER: 134:367506

TITLE: Design and photofunctions of
dendrimer-encapsulated
poly(phenyleneethynylene)s

AUTHOR(S): Jiang, Dong-Lin; Sato, Takafumi; Aida, Takuzo

CORPORATE SOURCE: Department of Chemistry and Biotechnology,
Graduate School of Engineering, The University
of Tokyo, Tokyo, 113-8656, Japan

SOURCE: Chinese Journal of Polymer Science (2001),
19(2), 161-166

CODEN: CJPSEG; ISSN: 0256-7679

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of increasing generation dendrimer side-groups on
phenylacetylene copolymers were synthesized. The light-harvesting
antenna functions of dendrimer frame works together with the
blue-light emitting activities of the
phenylacetylene copolymers were highlighted. The phenylacetylene
copolymer with largest dendrimer side-group gave a high emission
quantum yield of 0.97, indicating that the dendrimers protect the
conjugated backbone from collisional energy dissipation.

IT 135756-78-4DP, reaction products with 2,5-
diethynylhydroquinone, polymers with p-diiodobenzene
(dendritic; light-harvesting antenna dendritic-side-groups on

phenylacetylene copolymer that emits **blue light**)

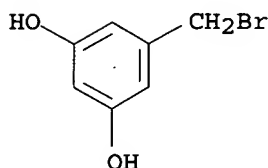
RN 135756-78-4 HCAPLUS

CN 1,3-Benzenediol, 5-(bromomethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 33617-40-2

CMF C7 H7 Br O2



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73

ST light harvesting antenna dendritic side group phenylacetylene copolymer; **blue light** emitting phenylacetylene copolymer dendritic side group

IT **Light**

(**blue; light**-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Polyethers, properties

(dendrimers; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Conducting polymers

Electronic excitation

Fluorescence

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Polyacetylenes, properties

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Photosystems

(light-harvesting antenna; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Dendritic polymers

(polyethers; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 135756-78-4DP, reaction products with 2,5-

diethynylhydroquinone, polymers with p-diiodobenzene

(dendritic; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 536-74-3DP, Ethynylbenzene, reaction products with phenylacetylene copolymer with dendritic-side-groups 252273-92-ODP,

ethynylbenzene terminated 252273-94-2DP, ethynylbenzene

terminated 340232-49-7P 340232-50-0P

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 75610-48-9 152811-37-5 176650-93-4 252273-95-3

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 252273-91-9P 252273-93-1P

(monomer; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:655692 HCAPLUS

DOCUMENT NUMBER: 133:335596

TITLE: Strongly fluorescent ethylene-bridged poly(para-phenylene) **ladder** polymers

AUTHOR(S): Forster, Michael; Scherf, Ullrich

CORPORATE SOURCE: Max-Planck-Institut fur Polymerforschung, Mainz, D-55128, Germany

SOURCE: Macromolecular Rapid Communications (2000), 21(12), 810-813

CODEN: MRCOE3; ISSN: 1022-1336

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

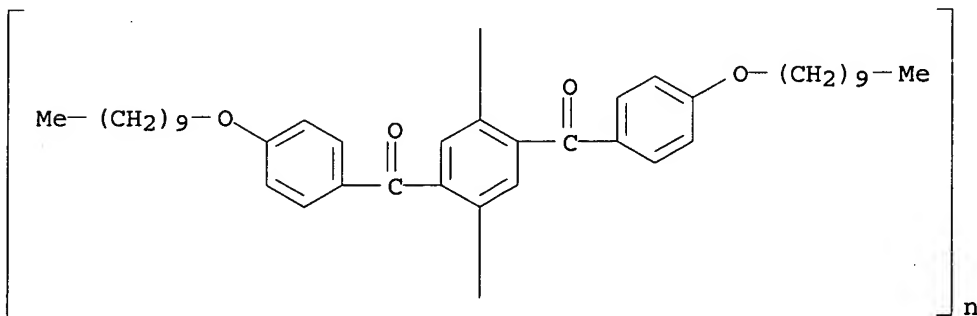
LANGUAGE: English

AB Fully soluble ethylene-bridged p-phenylene **ladder** poly(dihydrophenanthrene)s (LPDPs) were prepared via aryl-aryl homo-coupling according to the method of Yamamoto described by K. Chmil and U. Scherf (1993), followed by polymer-analogous pinacolization with SmI₂. The strongly fluorescent polymers obtained were characterized by NMR, UV/Vis-, and photoluminescence (PL) measurements.

IT 192316-37-3DP, reductively cyclized (poly(dihydrophenanthrene); preparation of strongly fluorescent decylbenzoyl-p-phenylene **ladder** polymers via coupling and cyclization and effect of rigidity on **luminescence**)

RN 192316-37-3 HCAPLUS

CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX NAME)

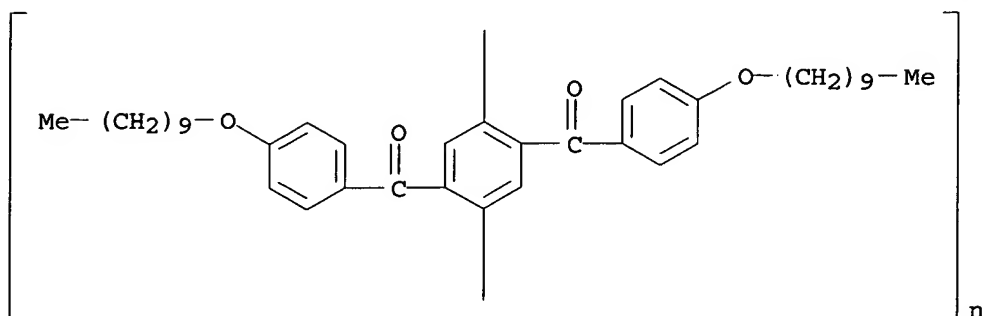


IT 192316-37-3P

(preparation of strongly fluorescent decylbenzoyl-p-phenylene
ladder polymers via coupling and cyclization and effect
of rigidity on luminescence)

RN 192316-37-3 HCAPLUS

CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX
NAME)



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

ST polyphenylene ladder prepn coupling pinacolization
sequence; samarium iodide pinacolization polydihydrophenanthrene
ladder polymer prepn; fluorescent polyphenylene ethylene
bridged ladder polymer

IT Coupling reaction

Luminescence

(preparation of strongly fluorescent decylbenzoyl-p-phenylene
ladder polymers via coupling and cyclization and effect
of rigidity on luminescence)

IT Ladder polymers

Polyphenyls

(preparation of strongly fluorescent decylbenzoyl-p-phenylene
ladder polymers via coupling and cyclization and effect
of rigidity on luminescence)

IT Cyclization

(reductive; preparation of strongly fluorescent decylbenzoyl-p-
phenylene ladder polymers via coupling and
cyclization and effect of rigidity on luminescence)

IT Polymer chains

(rigid; preparation of strongly fluorescent decylbenzoyl-p-phenylene
ladder polymers via coupling and cyclization and effect
of rigidity on luminescence)

IT 32248-43-4, Samarium iodide (SmI2)

(cyclization reagent; preparation of strongly fluorescent
decylbenzoyl-p-phenylene ladder polymers via coupling
and cyclization and effect of rigidity on luminescence
)

IT 147833-55-4DP, reductively cyclized 192316-37-3DP,
reductively cyclized

(poly(dihydrophenanthrene); preparation of strongly fluorescent
decylbenzoyl-p-phenylene ladder polymers via coupling
and cyclization and effect of rigidity on luminescence
)

IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel

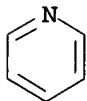
(polymerization catalyst; preparation of strongly fluorescent
decylbenzoyl-p-phenylene ladder polymers via coupling
and cyclization and effect of rigidity on luminescence)

IT 147833-55-4DP, reductively cyclized 192316-37-3P
(preparation of strongly fluorescent decylbenzoyl-p-phenylene
ladder polymers via coupling and cyclization and effect
of rigidity on luminescence)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:558357 HCAPLUS
DOCUMENT NUMBER: 131:329154
TITLE: Synthesis and optical properties of a series
of pyrrolopyridazine derivatives: deep blue
organic luminophors for electroluminescent
devices
AUTHOR(S): Cheng, Yang; Ma, Bin; Wudl, Fred
CORPORATE SOURCE: Exotic Materials Institute and Department of
Chemistry and Biochemistry, University of
California, Los Angeles, CA, 90095, USA
SOURCE: Journal of Materials Chemistry (1999), 9(9),
2183-2188
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors describe a systematic study of eight blue
light-emitting mols. which can be prepared in one step from
inexpensive com. starting materials. The relative luminescence
quantum yield can be $\leq 84\%$ and the heterocycles are
luminescent in the condensed state, either as solids or as oils,
indicating that there is no self-quenching in this system. The
last observation augurs well for these heterocycles being useful
in the fabrication of deep blue light-emitting
devices.

IT 16969-45-2P
(synthesis and optical properties of a series of
pyrrolopyridazine derivs. and their protonated forms)
RN 16969-45-2 HCAPLUS
CN Pyridine, conjugate acid (8CI, 9CI) (CA INDEX NAME)



● H⁺

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other
Related Properties)
Section cross-reference(s): 22, 28
IT 7593-61-5DP, protonated 7605-03-0DP, protonated
16969-45-2P
(synthesis and optical properties of a series of
pyrrolopyridazine derivs. and their protonated forms)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:437450 HCAPLUS

DOCUMENT NUMBER: 131:177038

TITLE: A comparative study on the properties of
poly(2,5-dimethoxy-1,4-phenylene vinylene) by
the CPR and Wessling methods

AUTHOR(S): Wang, Y. M.; Gan, Y. Y.; Kang, E. T.; Gan, L.
H.

CORPORATE SOURCE: School of Science, Nanyang Technological
University, Singapore, 259756, Singapore

SOURCE: Journal of Applied Polymer Science (1999),
73(11), 2177-2181

CODEN: JAPNAB; ISSN: 0021-8995

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

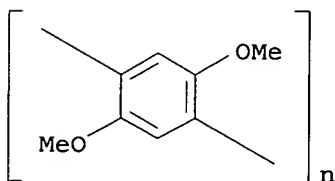
LANGUAGE: English

AB Poly(2,5-dimethoxy-1,4-phenylene vinylene) (PDMoPV) prepared via the
Cl precursor route (CPR) exhibits absorption at a shorter
wavelength than that obtained by the Wessling method. The polymer
fluoresces at a maximum of 505 nm as compared to 540 nm by Wessling
method. Both the fabricated ITO-PDMoPV (via CPR)-Al and
ITO/PDMoPV (via Wessling method)-Al devices emit green-
blue light and the turn-on voltages are
relatively low at 7 and 4 V, resp. Significantly, the device
fabricated using PDMoPV via CPR has a higher output than that via
the Wessling method.

IT 62271-79-8P, Poly(2,5-dimethoxy-1,4-phenylene)
(comparative study on properties of poly(dimethoxyphenylene
vinylene) by chlorine precursor routh and Wessling methods with
LED, and fluorescence optical and elec. properties)

RN 62271-79-8 HCAPLUS

CN Poly(2,5-dimethoxy-1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and
Other Related Properties)

Section cross-reference(s): 35, 36, 76

IT 62271-79-8P, Poly(2,5-dimethoxy-1,4-phenylene)
(comparative study on properties of poly(dimethoxyphenylene
vinylene) by chlorine precursor routh and Wessling methods with
LED, and fluorescence optical and elec. properties)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:779182 HCAPLUS

DOCUMENT NUMBER: 130:110705
 TITLE: Electroactive materials containing macrocyclic pseudo-crown ether cavities electroformed from a solid-state electropolymerization reaction
 AUTHOR(S): Fabre, Bruno; Marrec, Philippe; Simonet, Jacques
 CORPORATE SOURCE: Laboratoire d'Electrochimie Moleculaire et Macromoleculaire, Unite Mixte de Recherche du CNRS No. 6510, Universite de Rennes I, Rennes, 35042, Fr.
 SOURCE: Journal of the Electrochemical Society (1998), 145(12), 4110-4119
 CODEN: JESOAN; ISSN: 0013-4651
 PUBLISHER: Electrochemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

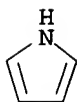
AB Monomers comprising aromatic groups (pyrrole/thiophene, pyrrole/dimethoxybenzene, and dimethoxybenzene/thiophene) linked by an ether chain were prepared, and subjected to two-step electropolymerization. In the first step, at relatively low anodic potential, oxidation of the pyrrole moiety in the monomer led to electroactive homopolymer films containing pendant aromatic moieties. Subsequent oxidation of the homopolymers by applying more positive potentials promoted anodic coupling of the pendant moiety, the thiophene, within the structure. The efficiency of this solid-state electropolymerization reaction was strongly dependent on film thickness. The resulting electroactive polymers have controllable size pseudo-crown ether cavities in a ladder-like structure. The polymers are electrochemically stable and have redox reversibility, and the reticulation step did not affect the conjugation of the polymer obtained in the first step. SEM images indicate a tortuous and irregular surface of the polymers, more so in the second-stage structure which also showed convolutions under high magnification. The polymers have potential for complexation with cations through the ether cavities.

IT 30604-81-0P, Polypyrrole
 (polythiophene, ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymerization.)

RN 30604-81-0 HCAPLUS
 CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7
 CMF C4 H5 N



CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 72

ST pyrrolyletherthiophene monomer electrochem polymer two stage; crown ether like cavity pyrrolyletherthiophene electroactive polymer; anodic coupling thiophene polypyrrole ether linkage conducting polymer; conjugated polypyrrole polythiophene ether ladder

- polymer
- IT Polymers, preparation
(conjugated, polypyrrole polythiophenes, **ladder**;
preparation and electroactivity of poly(pyrrole-thiophene)s with
pseudo-crown ether cavity and **ladder** structure by
electropolymer.)
- IT Coupling reaction
(electrochem., anodic; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT Polymerization
(electrochem., oxidative and anodic coupling; preparation and
electroactivity of poly(pyrrole-thiophene)s with pseudo-crown
ether cavity and **ladder** structure by electropolymer.)
- IT Redox reaction
(electrochem.; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT Conducting polymers
(polypyrrole polythiophene **ladder**; preparation and
electroactivity of poly(pyrrole-thiophene)s with pseudo-crown
ether cavity and **ladder** structure by electropolymer.)
- IT **Ladder** polymers
(polypyrrole polythiophenes; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT Polymers, preparation
(polypyrrole-polythiophene, **ladder**; preparation and
electroactivity of poly(pyrrole-thiophene)s with pseudo-crown
ether cavity and **ladder** structure by electropolymer.)
- IT Polymers, preparation
(polythiophenes, polymethoxyphenyl side chain; preparation and
electroactivity of poly(pyrrole-thiophene)s with pseudo-crown
ether cavity and **ladder** structure by electropolymer.)
- IT Optical absorption
(preparation and electroactivity of poly(pyrrole-thiophene)s with
pseudo-crown ether cavity and **ladder** structure by
electropolymer.)
- IT Polymer chains
(side, pseudo crown ether; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT 219690-53-6P 219690-54-7P
(**ladder**, pseudo-crown cavity; preparation and
electroactivity of poly(pyrrole-thiophene)s with pseudo-crown
ether cavity and **ladder** structure by electropolymer.)
- IT 75-05-8, Acetonitrile, uses 429-42-5, Tetrabutylammonium
tetrafluoroborate
(polymerization electrolyte; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT 30604-81-0P, Polypyrrole
(polythiophene, **ladder**; preparation and electroactivity of
poly(pyrrole-thiophene)s with pseudo-crown ether cavity and
ladder structure by electropolymer.)
- IT 219690-55-8P
(preparation and electroactivity of poly(pyrrole-thiophene)s with
pseudo-crown ether cavity and **ladder** structure by
electropolymer.)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:336241 HCAPLUS

DOCUMENT NUMBER: 129:46944

TITLE: Self-assembled multilayers and
photoluminescence properties of a new
water-soluble poly(para-phenylene)

AUTHOR(S): Shi, Xiaobo; Li, DeQuan; Lutt, M.;
Fitzsimmons, M. R.; Van Patten, G. P.

CORPORATE SOURCE: Chemical Science and Technology Division(CST4)
and Manuel Lujan Jr. Neutron Scattering
Center, Los Alamos National Laboratory, Los
Alamos, NM, 87545, USA

SOURCE: Materials Research Society Symposium
Proceedings (1998), 488(Electrical, Optical,
and Magnetic Properties of Organic Solid-State
Materials IV), 133-140
CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

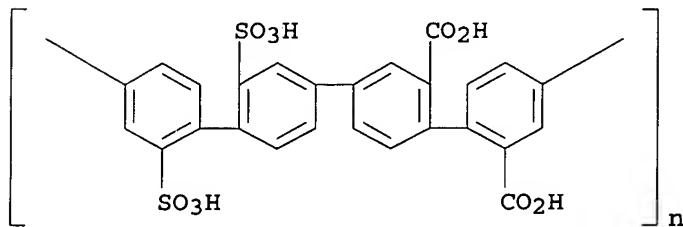
AB This paper reports the synthesis and characterizations of a new
water-soluble poly(para-phenylene) (PPP) and its applications in
preparing self-assembled multi-layer films. This new water-soluble
conducting polymer was prepared through the sulfonation reaction of
poly(p- quarterphenylene-2,2'-dicarboxylic acid). The
incorporation of sulfonate groups has dramatically improved PPP's
solubility in H₂O at a wide pH range, whereas previous PPP is only
slightly soluble in basic solns. Dilute aqueous solns. of this polymer
with acidic, neutral or basic pH emit brilliant **blue**
light while irradiated with UV light. The sulfonated PPP
emits from 350 nm to 455 nm with a maximum intensity at 380 nm.
Self-assembled multilayers of this sulfonated PPP were constructed
with a pos. charged polymer poly(diallyl di-Me ammonium chloride)
and characterized with various surface analyses. Conductive (RuO₂
and ITO), semiconductive (Si wafer), and nonconductive (SiO₂)
substrates were used in the preparation of self-assembled multilayers.
Elec., optical and structural properties of these novel
self-assembled thin films are discussed.

IT 208389-57-5P

(self-assembled multilayers and photoluminescence properties of
a new water-soluble poly(para-phenylene))

RN 208389-57-5 HCAPLUS

CN Poly[(2,2'-dicarboxy-3'',2'''-disulfo[1,1':4',1'':4'',1'''-
quaterphenyl]-4,4'''-diyl)] (9CI) (CA INDEX NAME)

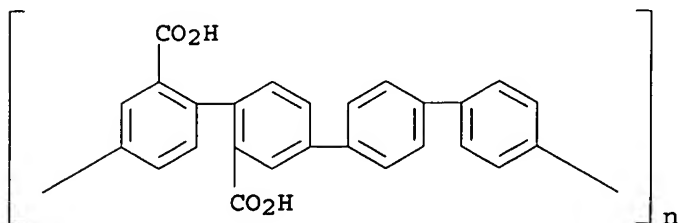


IT 135615-40-6

(self-assembled multilayers and photoluminescence properties of a new water-soluble poly(para-phenylene) prepared by sulfonation of)

RN 135615-40-6 HCAPLUS

CN Poly(2,2'-dicarboxy[1,1':4',1'':4'',1'''-quaterphenyl]-4,4'''-diyl) (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 38

IT 208389-57-5P

(self-assembled multilayers and photoluminescence properties of a new water-soluble poly(para-phenylene))

IT 135615-40-6

(self-assembled multilayers and photoluminescence properties of a new water-soluble poly(para-phenylene) prepared by sulfonation of)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:89779 HCAPLUS

DOCUMENT NUMBER: 128:115314

TITLE: Water Soluble Photo- and Electroluminescent Alkoxy-Sulfonated Poly(p-phenylenes) Synthesized via Palladium Catalysis

AUTHOR(S): Kim, Seungho; Jackiw, Jennifer; Robinson, Edward; Schanze, Kirk S.; Reynolds, John R.; Baur, Jeff; Rubner, Michael F.; Boils, Danielle

CORPORATE SOURCE: Department of Chemistry Center for Macromolecular Science and Engineering, University of Florida, Gainesville, FL, 32611, USA

SOURCE: Macromolecules (1998), 31(4), 964-974

CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Water-soluble poly(p-phenylene) derivs., poly[2,5-bis(3-sulfonatopropoxy)-1,4-phenylene-alt-1,4-phenylene] sodium salt (PPP-OPSO3) and poly[2,5-bis(3-sulfonatopropoxy)-1,4-phenylene-alt-4,4'-biphenylene] sodium salt (PPBP-OPSO3), were synthesized through a Suzuki coupling reaction of 1,4-dibromo-2,5-bis(3-sulfonatopropoxy)benzene sodium salt with 1,4-phenylenediboronic acid or 4,4'-biphenyldiyldiboronic acid 2,2'-dimethylpropyl diester using a water-soluble Pd(0) catalyst or Pd(OAc)2. The pH dependence of the coupling reaction was investigated and resulted in pH independence at pH levels greater than 10.0. End group anal. of PPP-OPSO3 via 1H NMR of tert-Bu end-capped polymers

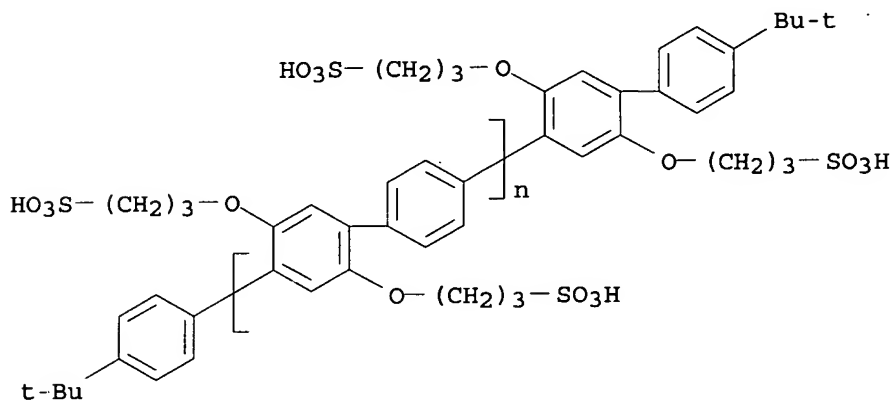
indicates d.p. in excess of 40 (ca. 80 rings per chain). Viscometric anal. of PPP-OPSO3 in water shows a behavior comparable to sodium poly(styrenesulfonate) (PSS) of mol. weight 8000. In addition, the polyelectrolyte effect is observed at low polymer concns. The λ_{\max} of the $\pi \rightarrow \pi^*$ absorption for PPP-OPSO3 is found at 339-342 nm, while that of PPBP-OPSO3 shows a bathochromic shift to 349-352 nm. All of the water-soluble PPP oligomers and polymers feature strong blue fluorescence. The fluorescence has been characterized by quantum yield and lifetime studies. Nanosecond-microsecond laser flash photolysis expts. indicate that direct excitation of the polymers in the near-UV leads to triplet state formation, albeit with comparatively low efficiency. Multilayered films of PPP-OPSO3 were fabricated with poly(ethyleneimine) (PEI) using layer-by-layer self-assembly and incorporated into blue-light-emitting devices.

IT 201605-68-7P

(preparation and characterization of)

RN 201605-68-7 HCAPLUS

CN Poly[2,5-bis(3-sulfopropoxy) [1,1'-biphenyl]-4,4'-diyl],
 α -[4-(1,1-dimethylethyl)phenyl]- ω -[4'-(1,1-dimethylethyl)-2,5-bis(3-sulfopropoxy) [1,1'-biphenyl]-4-yl]-,
 sodium salt (9CI) (CA INDEX NAME)



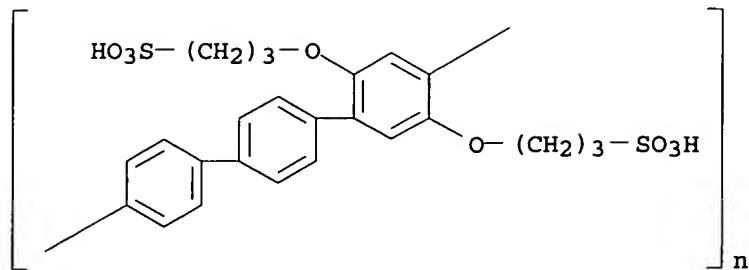
●x Na

IT 174721-53-0P

(preparation of water-soluble photo- and electroluminescent)

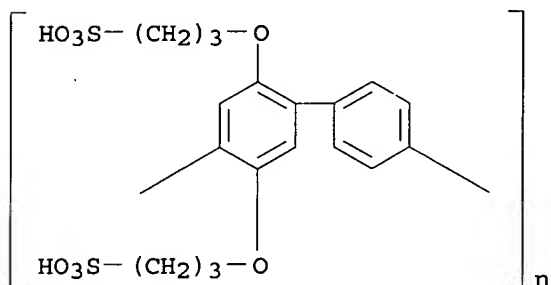
RN 174721-53-0 HCAPLUS

CN Poly[2,5-bis(3-sulfopropoxy) [1,1':4',1''-terphenyl]-4,4''-diyl
 disodium salt] (9CI) (CA INDEX NAME)



●2 Na

IT 153986-30-2P
 (preparation of water-soluble photo- and electroluminescent)
 RN 153986-30-2 HCAPLUS
 CN Poly[2,5-bis(3-sulfopropoxy) [1,1'-biphenyl]-4,4'-diyl disodium salt] (9CI) (CA INDEX NAME)



●2 Na

CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73
 IT 123324-71-0DP, (4-tert-Butylphenyl)boronic acid, reaction products with alkoxy-sulfonated polyphenylenes 174697-31-5DP, reaction products with (tert-butylphenyl)boronic acid 201605-68-7P (preparation and characterization of)
 IT 174721-53-0P 201605-64-3P (preparation of water-soluble photo- and electroluminescent)
 IT 153986-30-2P 174697-31-5P, 1,4-Dibromo-2,5-bis(3-sulfonatopropoxy)benzene disodium salt-1,4-phenylenediboronic acid copolymer (preparation of water-soluble photo- and electroluminescent)
 REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:611611 HCAPLUS
 DOCUMENT NUMBER: 127:307757

TITLE: Novel chiral poly(p-phenylene) derivatives containing cyclophane-type moieties

AUTHOR(S): Fiesel, Rainer; Huber, Joachim; Apel, Ute; Enkelmann, Volker; Hentschke, Reinhard; Scherf, Ullrich; Cabrera, Karin

CORPORATE SOURCE: Max-Planck-Institut Polymerforschung, Mainz, D-55128, Germany

SOURCE: Macromolecular Chemistry and Physics (1997), 198(9), 2623-2650
CODEN: MCHPES; ISSN: 1022-1352

PUBLISHER: Huethig & Wepf

DOCUMENT TYPE: Journal

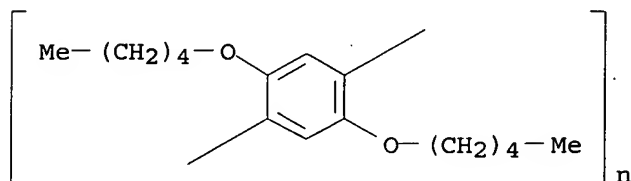
LANGUAGE: English

AB The introduction of cyclic ansa-substituents allows for the synthesis of soluble poly(p-phenylene)s (PPP's) possessing main chain chirality. The novel chiral PPP's represent an attractive combination of π -conjugated character and chirality. The authors have synthesized open chain (single-stranded) as well as ladder-type chiral PPP's. The single-stranded chiral PPP's exhibit temperature-dependent changes of chiroptical properties. The behavior should be assigned to conformational changes. The chiral ladder polymers contain the cyclophane loops exclusively on one side of the mol. board and are characterized by an unexpectedly high chiroptical activity of the π - π^* -transition. They are potential candidates to study non-linear chiroptical properties and to investigate circular polarized luminescence (photo- and electroluminescence) effects.

IT 196870-84-5P, Poly[2,5-bis(pentyloxy)-1,4-phenylene] (preparation and properties of chiral poly(p-phenylene)s containing cyclophane-type moieties)

RN 196870-84-5 HCAPLUS

CN Poly[2,5-bis(pentyloxy)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

IT Ladder polymers (preparation and properties of chiral poly(p-phenylene) derivs. containing cyclophane-type moieties)

IT 196870-83-4P 196870-84-5P, Poly[2,5-bis(pentyloxy)-1,4-phenylene] 196870-85-6P 196870-86-7P 196965-78-3P 197251-96-0P 197251-97-1P 197316-07-7P 197316-08-8P (preparation and properties of chiral poly(p-phenylene)s containing cyclophane-type moieties)

L51 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:382204 HCAPLUS

DOCUMENT NUMBER: 127:82378

TITLE: Light-emitting diode based on oligo-phenylene vinylene and butyl-PBD blends

AUTHOR(S): Lee, Jae-Gyoung; Park, Byoungchoo; Woo,

Hyung-Suk; Kim, Youngkyoo; Ha, Chang-Sik; Lee, Choong-Man; Jeong, Kwangho; Ha, Jeong-Hyon; Kim, Yong-Rok

CORPORATE SOURCE: Electronic Materials Lab., Institute for Advanced Engineering, Kyonggi-Do, S. Korea

SOURCE: Solid State Communications (1997), 102(12), 895-898

CODEN: SSCO44; ISSN: 0038-1098

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors have fabricated light-emitting diodes (LEDs) using organic materials; a polymer blend dispersing oligophenylenevinylene (oligo-PV), 1,4-distyrylbenzene and 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (butyl-PBD) as emissive materials into a soluble polyimide mixed with polyaniline (PANI) of emeraldine salt used as a hole transport material. These polymer dispersed materials were sandwiched between In and indium-tin-oxide (ITO) electrodes. In order to increase the electron injection into the emissive materials, we have inserted a thin Mg layer between In and polymer blends. The electroluminescence (EL) spectra of LEDs showed noticeable enhancement of the oscillator strength of oligo-PV peak at 2.76 eV. This implies improved quantum efficiency of this blue light-emitting diode, resulting from the excitonic migration from butyl-PBD to oligo-PV. We have found that the EL device with host polymers, polyimide and PANI, displayed increasing device performance, lowering the turning point in I-V characteristics, compared to that of LED without PANI. Under normal illumination conditions, our devices with PANI showed visible blue-violet color at room temperature after applying a bias exceeding 8 V.

IT 25233-30-1P, Polyaniline
(emeraldine salt form; fabrication and performance of light-emitting diodes based on oligophenylenevinylene-polymer blends)

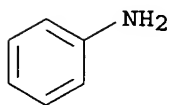
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N

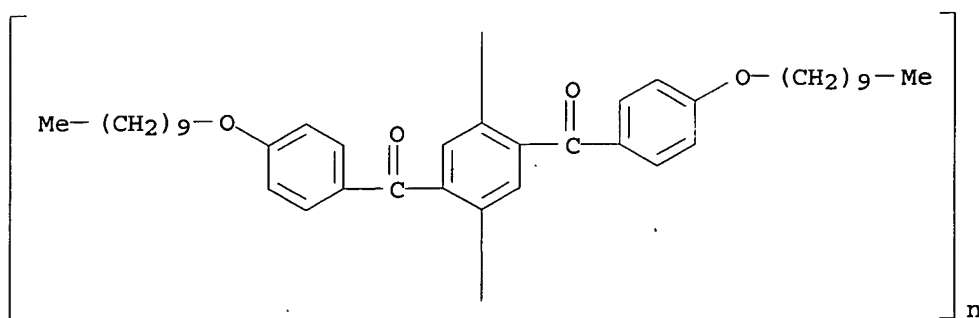


CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73, 76

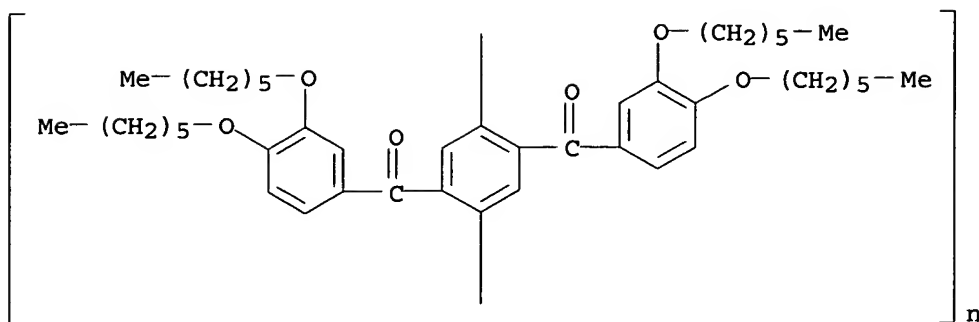
IT 25233-30-1P, Polyaniline
(emeraldine salt form; fabrication and performance of light-emitting diodes based on oligophenylenevinylene-polymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

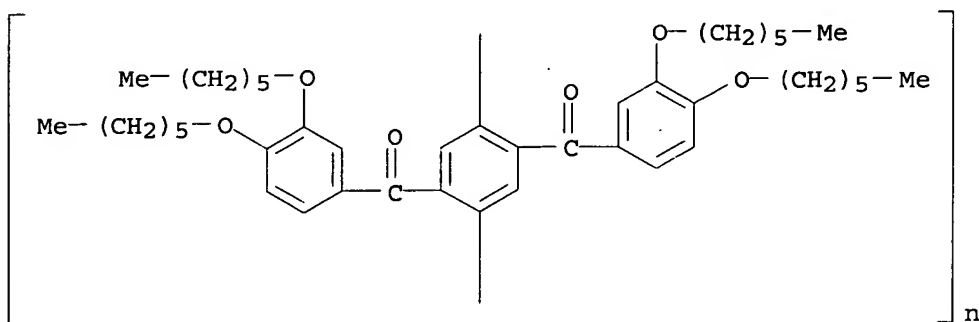
L51 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:341555 HCAPLUS
 DOCUMENT NUMBER: 127:109279
 TITLE: Conjugated all-carbon ladder
 polymers. Improved solubility and molecular
 weights
 AUTHOR(S): Chmil, K.; Scherf, U.
 CORPORATE SOURCE: Max-Planck-Institut Polymerforschung, Mainz,
 D-55128, Germany
 SOURCE: Acta Polymerica (1997), 48(5-6), 208-211
 CODEN: ACPODY; ISSN: 0323-7648
 PUBLISHER: VCH
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A synthesis of the title polymers is achieved with a more highly
 substituted monomer than previously used: 2,5-dibromo-1,4-bis(3,4-
 dihexyloxybenzoyl)benzene, allowing the synthesis of enlarged
 polymer chains with $M_n \approx 12000$ and $M_w \approx 22000$,
 corresponding to a condensation of about 18 phenylene units. The
 first step, formation of the polymeric, open-chain precursor, is
 an AA-type coupling using Ni(COID)₂ for the dehalogenation with
 co-reagents 2,2'-bipyridine and 1,5-cyclooctadiene with
 dimethylacetamide or DMF as solvent. The cyclization is carried
 out using B₂S₃ generated in situ from BCl₃ and tricyclohexyltin
 sulfide, leading to formation of thioketones which dimerize to
 form cyclic disulfide bridges followed by elimination of S₂ to
 give the conjugated aromatic ladder polymer, whose
 structure and mol. weight is confirmed by NMR, UV/vis spectra,
 photoluminescence spectra, and GPC.
 IT 192316-37-3D, reductive cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 RN 192316-37-3 HCAPLUS
 CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX
 NAME)



IT 192316-36-2P, 2,5-Dibromo-1,4-bis(3,4-
 dihexyloxybenzoyl)benzene homopolymer, sr
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 RN 192316-36-2 HCAPLUS
 CN Poly[2,5-bis[3,4-bis(hexyloxy)benzoyl]-1,4-phenylene] (9CI) (CA
 INDEX NAME)

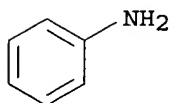


IT 192316-36-2DP, reductive cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 RN 192316-36-2 HCAPLUS
 CN Poly[2,5-bis[3,4-bis(hexyloxy)benzoyl]-1,4-phenylene] (9CI) (CA
 INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 73
 ST polymer carbon conjugated ladder polyacene synthesis
 IT Luminescence
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT Polyphenyls
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT Ladder polymers
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 147833-55-4D, reductive cyclized 192316-37-3D, reductive
 cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 192316-35-1P, 2,5-Dibromo-1,4-bis(3,4-dihexyloxybenzoyl)benzene
 homopolymer 192316-36-2P, 2,5-Dibromo-1,4-bis(3,4-
 dihexyloxybenzoyl)benzene homopolymer, sru
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 192316-35-1DP, reductive cyclized 192316-36-2DP,
 reductive cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)

L51 ANSWER 25 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:806225 HCAPLUS
DOCUMENT NUMBER: 124:30525
TITLE: Bright blue electroluminescence from an
oxadiazole-containing copolymer
AUTHOR(S): Pei, Qibing; Yang, Yang
CORPORATE SOURCE: UNIAX Corp., Santa Barbara, CA, 93117, USA
SOURCE: Advanced Materials (Weinheim, Germany) (1995),
7(6), 559-61
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: VCH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Blue electroluminescence of a synthesized polyoxadiazole-polyether
(OP) film is reported. LED devices were prepared by combination of
this OP film with other polymeric layers (e.g. conducting
polyaniline) between In-Sn-oxide and a Ca electrode. The external
quantum efficiency was increased to 0.1% and the intensity of the
blue emitted light to 40 cd/m2.
IT 25233-30-1, Polyaniline
(dodecylbenzenesulfonic acid-doped; quantum efficiency of LEDs
with oxadiazole-containing polymeric layers)
RN 25233-30-1 HCAPLUS
CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)
CM 1
CRN 62-53-3
CMF C6 H7 N

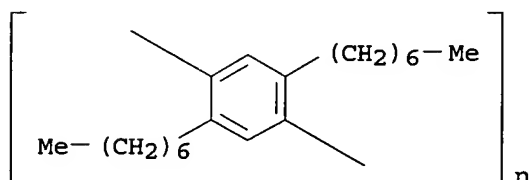


CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 73
IT 25233-30-1, Polyaniline
(dodecylbenzenesulfonic acid-doped; quantum efficiency of LEDs
with oxadiazole-containing polymeric layers)

L51 ANSWER 26 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:576198 HCAPLUS
DOCUMENT NUMBER: 122:292686
TITLE: Blue electroluminescence from
poly(2,5-diheptyloxy-1,4-phenylene)
AUTHOR(S): Hamaguchi, Maki; Yoshino, Katsumi
CORPORATE SOURCE: Dept. Elec. Eng., Osaka Univ., Osaka, 565,
Japan
SOURCE: Japanese Journal of Applied Physics, Part 2:
Letters (1995), 34(5A), L587-L589
CODEN: JAPLD8; ISSN: 0021-4922
PUBLISHER: Japanese Journal of Applied Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Poly(2,5-diheptyloxy-1,4-phenylene) has been prepared by oxidative
coupling of p-diheptyloxybenzene using iron(III) chloride as

catalyst in chloroform at room temperature The polymer obtained was completely soluble in chloroform. An electroluminescence diode based on this polymer emitting **blue light** was fabricated, and its properties are discussed in terms of the band structure of the diode.

IT 130870-49-4P, Poly(2,5-diheptyl-1,4-phenylene)
 (fabrication and characteristics of blue electroluminescent diodes from poly(diheptyloxyphenylene) prepared via oxidative polymerization)
 RN 130870-49-4 HCAPLUS
 CN Poly(2,5-diheptyl-1,4-phenylene) (9CI) (CA INDEX NAME)

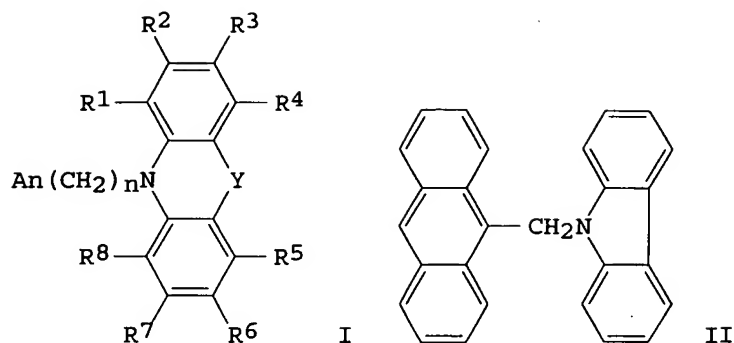


CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 35, 37, 73
 IT 130870-49-4P, Poly(2,5-diheptyl-1,4-phenylene)
 (fabrication and characteristics of blue electroluminescent diodes from poly(diheptyloxyphenylene) prepared via oxidative polymerization)

L51 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:680541 HCAPLUS
 DOCUMENT NUMBER: 121:280541
 TITLE: Preparation of (anthracenyl)alkylheterocycles as electroluminescent compounds
 INVENTOR(S): Uchino, Masazumi; Uchida, Manabu; Izumisawa, Jusho; Yoshizawa, Satoru; Furukawa, Kenji
 PATENT ASSIGNEE(S): Chisso Corp, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06206865	A2	19940726	JP 1993-277529	1993 1008
PRIORITY APPLN. INFO.:			JP 1992-301761	A1 1992 1014

OTHER SOURCE(S): MARPAT 121:280541
 GI

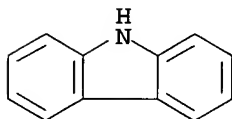


AB The title compds. I [An = anthracene; n = 1 or 2; Y = bond, S, etc.; R1 - R8 = H, halo, etc.] are prepared Carbazole derivative II was prepared from 9-chloromethylantracene and carbazole potassium salt. An electroluminescent element containing II showed a **blue light** under voltage 28 V.

IT 6033-87-0, Carbazole potassium salt
(preparation of (anthracenyl)alkylheterocycles as electroluminescent compds.)

RN 6033-87-0 HCAPLUS

CN 9H-Carbazole, potassium salt (9CI) (CA INDEX NAME)



● K

IC ICM C07D209-86
ICS C07D209-88; C07D219-02; C07D219-06; C07D241-46; C07D241-52;
C07D265-38; C07D279-22; C09K011-06

ICA G03G005-06

CC 27-11 (Heterocyclic Compounds (One Hetero Atom))

Section cross-reference(s): 28, 73

IT 92-84-2, Phenothiazine 135-67-1, Phenoxazine 6033-87-0
, Carbazole potassium salt 6624-23-3, 9-Anthraceneacetic acid
24463-19-2, 9-Chloromethylantracene 122875-66-5
(preparation of (anthracenyl)alkylheterocycles as electroluminescent compds.)

L51 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:128426 HCAPLUS

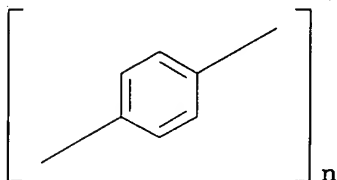
DOCUMENT NUMBER: 106:128426

TITLE: Optical excitation in highly crystalline
polyparaphenylene

AUTHOR(S): Leising, Gunther; Leitner, O.; Aldrian, F.;
Kahlert, Hartmut W.

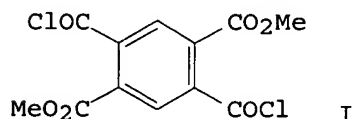
CORPORATE SOURCE: Inst. Festkoerperphys., Tech. Univ. Graz,
Graz, A-8010, Austria

SOURCE: Synthetic Metals (1987), 17(1-3), 635-8
CODEN: SYMEDZ; ISSN: 0379-6779
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Highly crystalline poly(p-phenylene) was synthesized starting from a benzene/p-terphenyl mixture, which was polymerized in analogy to the Kovacic-procedure. The high crystallinity of the as prepared polymer and its increase by annealing is demonstrated by x-ray diffraction. On excitation with **blue light** (360 nm) a broad red luminescence peak appears around 700 nm. This emission and the corresponding high-energy absorption at .apprx.360 nm are explained by electron-hole photoexcitation, lattice relaxation to a polaron-exciton defect and recombination luminescence emission.
IT 25190-62-9P, Poly(p-phenylene)
(preparation and luminescence and crystallinity of)
RN 25190-62-9 HCAPLUS
CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-6 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36
IT 25190-62-9P, Poly(p-phenylene)
(preparation and luminescence and crystallinity of)

L51 ANSWER 29 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:107087 HCAPLUS
DOCUMENT NUMBER: 86:107087
TITLE: **Ladder** and partial ladder polyquinones
AUTHOR(S): Saltybaev, D. K.; Zhubanov, B. A.
CORPORATE SOURCE: USSR
SOURCE: Vestnik Akademii Nauk Kazakhskoi SSR (1976), (11), 29-35
CODEN: VANKAM; ISSN: 0002-3213
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



AB The mechanism of polyquinone formation via the acylation of arenes or heterocyclic compds. with pyromellitic dianhydride [89-32-7] or its derivative I [19014-14-3] in the presence of metal chlorides is

discussed and the polyquinone obtained by acylation with I in the presence of FeCl₃ [7705-08-0] is described. The use of FeCl₃ instead of the usual AlCl₃ catalyst led to higher viscosities for the polyketo ester prepolymers, but the prepolymers were also partially cyclized. High radiation resistance was observed for the ladder polyquinones. Data are given for the partial ladder I-carbazole prepolymers [58317-00-3].

IT 58317-00-3P

(ladder and semi-ladder, properties and mechanism of preparation of)

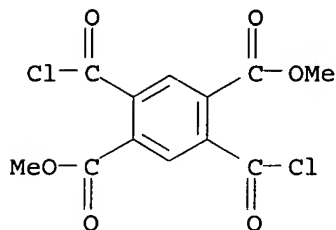
RN 58317-00-3 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-bis(chlorocarbonyl)-, dimethyl ester, polymer with 9H-carbazole (9CI) (CA INDEX NAME)

CM 1

CRN 19014-14-3

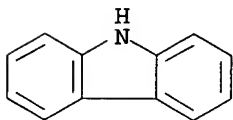
CMF C12 H8 C12 O6



CM 2

CRN 86-74-8

CMF C12 H9 N



CC 35-4 (Synthetic High Polymers)

ST polyquinone acylation prepn mechanism; arene acylation polymn pyromellitic anhydride; heterocycle acylation polymn pyromellitic anhydride; carbazole acylation polymn pyromellitic deriv; polyketo ester carbazole pyromellitic deriv; ladder polyquinone pyromellitic acylation; iron chloride polymn catalyst

IT Ladder polymers

(polyquinones, preparation and properties of, from pyromellitic acylation polymerization of arenes or heterocyclic compds.)

IT 58317-00-3P

(ladder and semi-ladder, properties and mechanism of preparation of)